

What is claimed:

1. A testing assembly for measuring friction of a coating of a test piece having a defined length, said testing assembly comprising:

a base;

a tower fixedly secured to said base;

a receiving channel extending through said tower, said receiving channel having a predetermined diameter for receiving the test piece therein; and

a port extending along a portion of said receiving channel for accessing the test piece at various points along the defined length such that temperature readings of the test piece can be taken when torque and tension are measured.

2. A testing assembly as set forth in claim 1 including a clamping fixture that is received by said receiving channel, said clamping fixture securing the test piece therein to position the test piece with respect to said port.

3. A testing assembly as set forth in claim 2 wherein said clamping fixture includes an access opening providing access to the test piece secured therein.

4. A testing assembly as set forth in claim 3 wherein said clamping fixture includes an access orientation notch for aligning said access opening with said port of said tower.

5. A testing assembly as set forth in claim 4 including a locator pin extending through a portion of said tower and into said receiving channel to be received by said access orientation notch.

6. A testing assembly as set forth in claim 5 further including a tower fastener for securing said clamping fixture into said receiving channel.

7. A testing assembly as set forth in claim 6 further including a spring channel extending into said tower along said receiving channel for providing resiliency in said tower to

clamp down on said receiving channel when said fastener secures said clamping fixture to said tower.

8. A testing assembly as set forth in claim 7 including thermal receptacles extending into said tower.

9. A testing assembly as set forth in claim 8 including thermal devices positionable inside said heating rod receptacles to heat said tower when said test assembly is in operation.

10. A testing assembly as set forth in claim 9 wherein said heating rod receptacles extend into said tower equidistantly about said receiving channel.

11. A testing assembly as set forth in claim 10 wherein said heating rod receptacles extend into said tower parallel to said receiving channel.

12. A testing assembly as set forth in claim 11 including a thermocouple port for receiving a thermocouple sensor therein to measure thermal energy of said tower.

13. A testing assembly as set forth in claim 12 wherein said clamping fixture includes a set screw for securing a portion of the test piece to said clamping fixture.

14. A testing assembly as set forth in claim 13 including a thermal insulator fixedly secured to said base.

15. A testing assembly as set forth in claim 14 wherein said tower extends upwardly from said base.

16. A clamping fixture assembly insertable into a tower having a port and a key to have a test piece and a fastener secured to said clamping fixture assembly, said clamping fixture assembly comprising:

a body having a predetermined length extending between a head receiving end and a fastener receiving end, said body defining a hollow core extending between said head receiving end and said fastener receiving end;

a fastener port disposed at said fastener receiving end for receiving a fastener therein; and

an access opening in said body between said head receiving end and said fastener receiving end, said access opening providing access to said hollow core along said defined length allowing measurements of the test piece to be taken while the test piece is secured to said clamping fixture assembly.

17. A clamping fixture assembly as set forth in claim 16 including an access orientation notch for receiving a key therein to orient said clamping fixture assembly with said tower to allow access via said access opening.

18. A clamping fixture assembly as set forth in claim 17 wherein said fastener port includes two parallel sides extending inwardly to prevent the fastener from substantial rotation about the test piece.

19. A clamping fixture assembly as set forth in claim 18 including a set screw channel extending through one of said two parallel sides, said set screw channel having a inner threaded surface.

20. A clamping fixture assembly as set forth in claim 19 including a set screw threadingly engaging said set screw channel to extend through said one of said two parallel sides to prevent the fastener from rotating with respect to said clamping fixture.

21. A clamping fixture assembly as set forth in claim 20 including a face plate securable to said head receiving end, said face plate having a defined roughness.